Readings
of particular interest

Water Conservation, Pricing, and Property Rights

Water Crisis: Ending the Policy Drought by Terry L. Anderson (Baltimore: Johns Hopkins Press and Washington, D.C.: Cato Institute, 1983), 121 pp.

The "energy crisis" may be mostly a memory, but the "water crisis" is just getting under way, according to Terry Anderson, professor of economics at Montana State. It affects both surface and underground water supplies. The federal Water Resources Council says that seventeen subregions in the country are either seriously short of surface water already or will be short by the year 2000. Groundwater—water in underground aquifers—is being taken out faster than it is naturally replenished; in some parts of the country groundwater levels are declining by seven to ten feet a year. As this happens, salt water is invading aquifers, soil is sinking, and pumping costs are going up.

Most often the government has responded to these shortages by taking regulatory steps to curtail allegedly wasteful demand and by building new reservoirs and aqueducts to increase supply. Anderson argues that both types of remedies are doomed to failure so long as prices are kept artificially low. On the demand side, what is often seen as waste—for example, letting water for lawns run into storm drains—"is simply the users' rational response to low water prices." Bruce R. Beattie and Henry S. Foster, Jr., reported in a study that water prices declined in real terms between 1960 and 1976 in most of the cities they studied; total water consumption has nearly doubled since 1960. Los Angeles, which suffers perennial water shortages, charges its residents only $0.60 per thousand gallons of water, while residents of Frankfurt, Germany, pay $2.82 per thousand gallons, or more than four times as much. (Americans consume three times as much water per capita as Europeans.) Farmers in the Central Valley of California pay as little as $5.00 per acre-foot for water that costs between $300 and $400 per acre-foot to deliver.

At these prices, the apparent need for new water supplies naturally mounts each year. Governments have tried to keep up with this growing demand by building more and more dams and delivery systems. Under the Reclamation Act of 1902, the federal government has made available vast quantities of water at below-market prices. These efforts run into the law of diminishing returns: many of the best western sites are already dammed, and federal funds for expensive reclamation projects are drying up.

It is sometimes assumed that water, as a "necessity," must not be very responsive to price changes. Beattie and Foster found, however, that a 10 percent price increase would cause total water usage to drop between 4 and 13 percent. Elasticity may be rather high for many agricultural and industrial uses, Anderson says. Among petroleum refineries and steel mills, for example, the amount of water used to produce a given output has varied in the past by a factor of twenty or more from plant to plant. Farmers can cut their water consumption in half by switching from rice or alfalfa growing to orange groves and vineyards, and drip irrigation uses a great deal less water than flood irrigation.

The best way to establish market-based prices, the author says, is to come up with an efficient system of property rights in water supplies. Such a system is much more than a theoretical construct, Anderson says: it actually existed in the form of the "prior appropriations" rules that evolved in frontier days in the West. These rules embraced the principle of "first-in-time, first-in-right." First users could sell their rights to later arrivals. Courts also issued injunctions against water pollution. Unfortunately, in Anderson's view, water law in many western states evolved toward

centralized administrative allocation under pressure from organized interests.

Many states declare all standing or flowing water to be state property and allow citizens to appropriate it only for certain specified "beneficial uses." In Montana "the state constitution prohibits the transfer and sale of water for use in coal slurry pipelines, suggesting that the state's constitutional reformers somehow knew that coal slurry would never provide a highest and best use for water." Such provisions can keep water prices low for farm users, but at considerable economic cost. Most western states have also adopted rules providing for "preferential use": in 1876, the Colorado constitution declared that "when the waters of a stream are not sufficient for all desiring its use, domestic use should have preference over agriculture and agriculture over manufacturing." Some states allow would-be users to condemn and take water away from less preferred uses, so long as they pay compensation.

In some states, moreover, it is not considered beneficial use to leave water in a stream for the sake of trout fishing or duck hunting. State governments have stepped in to protect these values by regulating other users. The federal government also regulates the use of navigable streams and their tributaries, which it defines loosely enough to cover most of the waters in the United States.

The author says a better way to preserve river amenities is found in England and Scotland. Private owners there have long enjoyed property rights in fishing streams. They collect considerable fees by renting these streams out to anglers' groups, and have found it profitable to protect and improve fish habitat in numerous ways. Moreover, they can and do sue upstream polluters that harm the fishing. The Angler's Cooperative Association monitors water pollution in England and rarely fails to win abatement or damages from polluters.

Groundwater is perhaps the most difficult issue, since it is subject to complex "common pool" problems. Anderson says, however, that recent technical advances (in monitoring pumping, for example) make it possible to end most of the inefficiencies by assigning surface landowners rights to "bank" and sell the stocks and flows of water in particular basins. While such a system "may still leave some externality problems, far less central control would be required than with present systems." A 1973 Oklahoma law incorporated some elements of such a scheme, and the recent development of the Tehachapi water basin in central California went even further in the same direction.

A Green Light for Arizona's Truckers

Initial Impact of Motor Carrier Deregulation in Arizona by Richard Beilock and James Freeman (Arizona Department of Transportation, January 1983), 54 pp.

Although trucking has not been completely deregulated at the federal level, several states have removed all controls on trucks operating within their borders. Florida was the first to do so in 1980, followed by Maine and Arizona in 1982. New Jersey and Delaware have never had meaningful regulation of intrastate trucking. [For details on the Florida experience, see Robert E. Mabley and Walter D. Strack, "Deregulation—A Green Light for Trucking Efficiency," *Regulation,* July/August 1982. In Arizona, deregulation came about through the referendum process. The measure passed by a two-to-one margin, doing as well in the state's rural counties as in Phoenix and Tucson.]

Richard Beilock of the University of Florida and James Freeman of the University of Kentucky here describe their study, for the Arizona Department of Transportation, of how deregulation has worked so far. The authors surveyed nearly a thousand carriers and shippers in the state and got responses from 261 shippers and 87 carriers—which they say is an unusually high response rate for an unsolicited survey.

The shippers polled agreed by a 62-to-5 percent margin that competition has risen rather than fallen under deregulation. About one-quarter of them said they thought rates had gone down due to deregulation while 10 percent said they had gone up. (Arizona imposed a trucking tax at the same time it removed the controls, which may have made it hard to separate the effects of the two.) Half the respondents said they had been offered specific discounts. In addition, one-quarter of them

had observed service cutbacks, while almost half (47 percent) said they had been offered new service under the law. Opinions on service quality were split, with 17 percent seeing an improvement and 19 percent a decline. Overall, a 58 percent majority of shippers favored continued deregulation, while only 15 percent wanted to bring back regulation.

The truckers agreed that it has led to more competition rather than less (60 percent to 9 percent) and that prices have gone down instead of up (44 percent to 20 percent). However, their opposition to deregulation was far from unanimous. No fewer than 32 percent of the truckers favored continued deregulation, while 49 percent were opposed and 19 percent had no preference.

Many remote rural areas in Arizona depend on truck transportation. The study did not find evidence that deregulation has hurt rural communities or small shippers. In fact, rural shippers (defined as those operating outside the Phoenix and Tucson areas) were slightly more satisfied with the results to date than their urban counterparts on issues of service quality, service cutbacks, and market competitiveness. The rural shippers also supported continued deregulation almost as strongly as did the urban shippers. There was more of a difference on these issues between large and small shippers than between urban and rural shippers; larger shippers seemed to receive more new service offers and discounts than their smaller brethren. Both large and small shippers, however, strongly supported deregulation.

Lumber Buyers and the Jones Act: Logging the Costs

"Lumber Transport and the Jones Act: A Multicommodity Spatial Equilibrium Analysis" by Roy Boyd, in *The Bell Journal of Economics*, vol. 14, no. 1 (Spring 1983), pp. 202-212.

Like many other countries, the United States has long had legislation restricting traffic between its own ports. The Jones Act, passed in 1920, reserves all coastwise shipping for U.S.-built, owned, and operated vessels. One result of the law is that lumber producers in the Pacific Northwest must use expensive U.S.-flag vessels in shipping to the East Coast. Their competitors in the nearby Canadian province of British Columbia, on the other hand, can use low-cost foreign ships—which, according to Roy Boyd of the University of Wisconsin at Milwaukee, may give the Canadians a substantial competitive advantage in the West-to-East-Coast lumber trade.

According to Boyd, a number of economists have predicted that this anomaly will cause inefficient substitution of Canadian for U.S. lumber. But the magnitude of the effect has been much debated. J. A. Austin and D. R. Darr argued in 1975 that Canadian producers enjoy other cost advantages aside from shipping, so that the impact of regulation might not be decisive. On the other hand, I. P. Morgan has noted that in the mid-1950s, when U.S. shipping rates fell below foreign rates, British Columbia lost much of its share of the eastern market.

The author developed a model of regional transportation flows based on data from the mid-1970s. He divided the United States and Canada for purposes of analysis into thirty-nine lumber-demanding and twenty-seven lumber-supplying regions. Next, he simulated the effect of hypothetical market freedom on the pattern of lumber shipments between regions and on resulting producer revenues and transport costs, and repeated the simulation under a variety of possible supply and demand conditions.

Boyd concluded that the act may create efficiency losses in lumber transport, but that those losses are not as important as the act's redistributive effect in transferring wealth from U.S. to Canadian lumber producers. Under deregulation, producers in the western United States "could be expected to gain a much larger share of the Northeast market at the expense of their Canadian counterparts," the author says. "Lumber shipments from the Western United States would increase by up to 986,559 (thousand board feet) per year while similar shipments from Canada would decline by anywhere from 679,081 (thousand board feet) to 914,399 (thousand board feet) per year."

Lumber producers in the West would gain more than $9 million a year from deregulation, while Canadian producers would lose around $7 million. Northeastern U.S. consumers would profit by more than $10 million annually, but most of these gains would come at the expense

of consumers in other parts of the United States whose lumber supplies the northeastern consumers would bid away. Overall, U.S. consumer and producer interests would gain more than $12 million from opening the market for lumber transport. Compared to these flows, the aggregate savings in transport costs would be relatively modest—no more than $6 million per year. "Substantial [efficiency] savings due to a repeal of this legislation depend on the presence of a large, expanding lumber market in the Northeast," which has not been the case in recent years.

Are Pollution Fees Practical?

Incentives for Environmental Protection, edited by Thomas C. Schelling (Cambridge: The MIT Press, 1983), 355 pp.

Pricing mechanisms for environmental protection seem to appeal much more to economists than to noneconomists. One possible reason is that administrators and legislators think such charges would be impractical to implement. Thomas Schelling of the Kennedy School of Government at Harvard writes in his introduction: "Even economists would not insist that special license plates exempt from speed limits be sold by the motor vehicle registries, or that auto horns be metered so that drivers pay for the noise they make." On the other hand, market mechanisms can sometimes help manage even very small environmental nuisances: the humble parking meter, after all, is an instance of congestion pricing. "A discriminating analysis might discover the generic characteristics of those environmental problems for which pricing and other incentive schemes will work" and those for which they will not.

This book contains case studies by three authors on the feasibility of using pricing systems to control pollution: Albert L. Nichols (benzene), David Harrison, Jr. (airport noise), and Robert Repetto (air pollution from stationary sources). It also includes a summary by Steven Kelman of a survey of attitudes on environmental issues among House and Senate staffers and environmentalist and business leaders. All authors are affiliated with the Kennedy School.

The diversity of the three cases, Schelling says, helps to show why no single type of pricing is likely to work best for all types of pollution. Noise pollution varies in severity by time of day, while the other forms do not. Tens of thousands of gas stations emit benzene, and stationary air pollution sources tend to be few and large. Victims of noise know that they are victims, while victims of benzene may not, and so forth.

The case studies indicate, first, that pricing schemes were not much harder to implement than regulatory standards. "Although there are problems (some of them difficult), the main problems are common to pricing mechanisms and regulatory standards," Schelling says. These problems may include not knowing how damages relate to emissions, or how severe damages are, or how to monitor emissions. Ideal charge schemes may indeed be impractical, he adds, but the compromises needed to make them workable do not wipe out all of their advantages.

Second, if regulators accepted the underlying principles of pricing, they could achieve many of the same intended benefits through well-designed regulatory standards. The need to measure the damage done by emissions leads a pricing scheme into assessing the value of health benefits, but ordinary regulatory standards must address the same issues and can incorporate the same insights. For example, either charges or emissions standards can vary by location according to population density—which Schelling believes is a good idea, since the harm done by an emission can differ from place to place by a factor of a hundred.

The airport-noise and air-quality studies predict that business would respond to such variable charges by moving to more sparsely populated places where it would do less harm. Generally this process should be seen as environmentally desirable, Schelling says, but it may penalize people who have few neighbors and therefore cannot "charge" a high emission fee. On the other hand, the more populous areas may resent the relocation too, since jobs and earnings move along with industry. If the residents of the latter areas prefer to keep the industry, pollution and all, they may support inflexible regulatory standards precisely to discourage industrial relocations that would minimize environmental damage.

One reason a switch from regulations to charges can be controversial is simply that it generally creates a large new money flow. Harrison says that although "a noise-charge scheme could be quite simple and inexpensive to administer (even with monitoring), objections from airlines over the accuracy or the legality of the charges could mire the program in administrative confusion." Moreover, there is a danger that the revenue raised might be spent in relatively inefficient ways. "There might be pressure to use the money to soundproof buildings," for instance, even if it were not economically efficient to do so.

Another possible problem with pricing is that there will be some uncertainty as to exactly how much pollution will result once a given emissions price is set. One system that reduces this uncertainty is that of "marketable permits," in which the government fixes an overall ceiling on the amount of pollution and lets companies trade rights to pollute within that ceiling. The problem is that the ceiling is arbitrary; the only way for the government to know in advance what level of pollution is optimal would be for it to know the abatement costs at each site (as well as the benefits of abatement).

The marketable permits system, Schelling says, makes sense mostly when damage goes up more than in proportion to the concentration of emissions. Air pollution and aircraft noise may be subject to such "nonlinearity," but only at the local level, which suggests a permit system limited to particular airports or cities—adding up, perhaps, to a nationwide array of "bubbles." One danger of marketable permits is that they can be "cornered" or pooled collusively to create cartels, especially in "thin" local markets where there are few potential buyers.

Kelman's survey of Washington attitudes revealed a considerable polarization on the issues involved in pricing. The interviews showed neither proponents nor opponents to be very familiar with the efficiency arguments in favor of charges. Instead, their positions tended to correlate with their general ideological stance, favoring either markets or government intervention. Those who objected to charges were also likely to oppose standards based on cost-benefit comparisons.

One reason for the wide divisions of opinion, Schelling argues, is that economists tend to think pollution is troublesome precisely because it has not been brought into the market system—because it is inflicted unilaterally rather than traded. Many policy makers and members of the general public, on the other hand, tend to see pollution as itself the result of the workings of self-interest, which they identify with the market. The economists wish to rechannel the profit urge by manipulating perceived costs, but the critics hope simply to foil it.

On Administrative Fairness

Bureaucratic Justice: Managing Social Security Disability Claims by Jerry L. Mashaw (Yale University Press, 1983), 238 pp.

The biggest adjudicatory apparatus in the Western world belongs not to a regulatory agency but to the social security disability program. It has nearly 10,000 adjudicators who decide 1.3 million disability claims each year at a cost per case of less than $500. Since 1960, when the disability program was established in its current form, it has been studied extensively, and criticized from nearly every direction: as either too slow or too quick to pay benefits, as woodenly bureaucratic or possessed of uncontrollable discretion, as too sensitive or too insensitive to medical opinions of a claimant's capacity to work.

Jerry Mashaw, professor of law at Yale, says that the critics have judged the system's performance in implicit comparison with three basic models of how it should operate. The first and most popular model is that of *bureaucratic rationality:* has the program managed to "develop, at the least possible cost, a system for distinguishing between true and false claims"? This model, which Mashaw says has dominated the system's own internal ethic over the years, derives from an intent to make decision making systematic, manageable, and reviewable. In this model, hearing examiners are expected to display a minimum of subjectivity and policy-making judgment; the emphasis is on precedent, consistency, and adherence to legislative intent.

Bureaucratic rationality, however, exacts a cost in other values. For example, the seeming

rigidity of the rules will, in the case of unusually deserving or undeserving claimants, offend perceptions of what is fair. And it may seem callous to cut off the not-quite-disabled without a penny just because the system's decisions must be "bipolar" (either grant or deny). These considerations create pressures to move toward two other models of legitimacy: *professional treatment* and *moral judgment*.

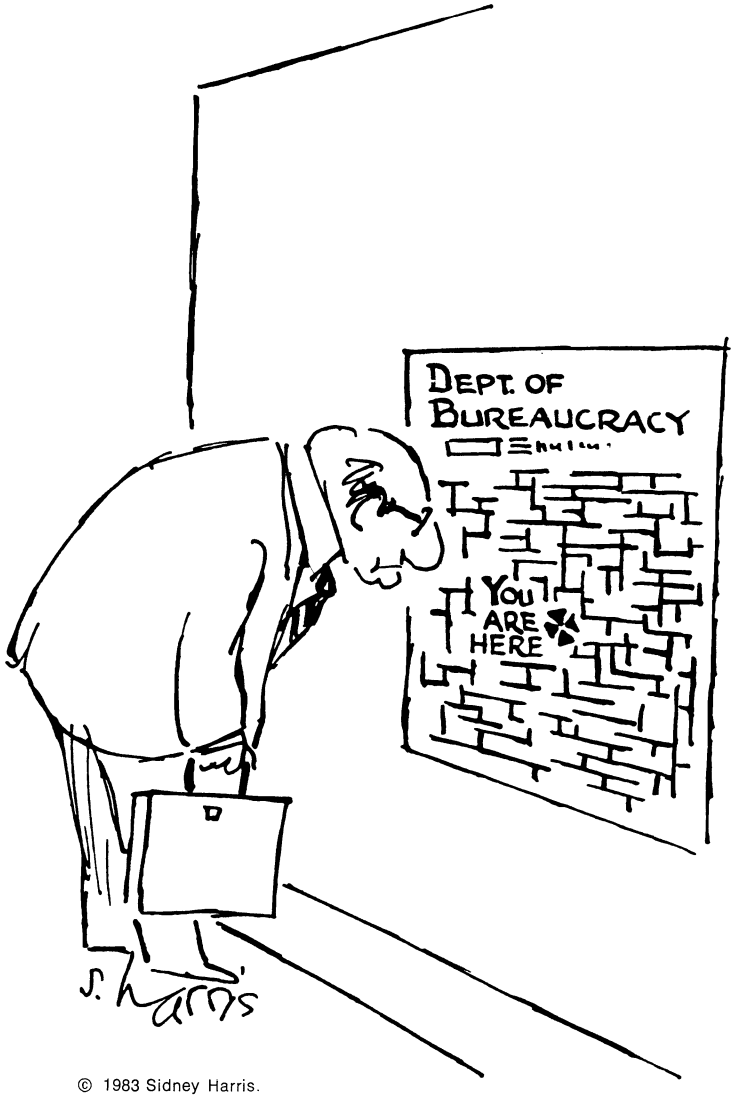
The ethic of *professional treatment*, borrowed from the medical and legal professions, holds that the program's goal is simply to serve its clients as well as it can within budgetary and other constraints. The agency should not just determine truth or falsity but should offer a range of remedies, counseling and guiding clients and trying to give special help to the neediest cases. That involves the exercise of professional judgment instead of strict adherence to preset standards.

This therapeutic approach avoids some of the rigid and hierarchical aspects of bureaucracy, but it places great authority in the hands of the therapist. Thus there arises a demand for the third goal, *moral judgment*, which follows the "most traditional model of justice": it stresses the rights of interested parties to due process and an impartial hearing before a neutral observer to vindicate their entitlements. This model may seem similar to that of bureaucratic rationality, in that it requires resolving the truth of disputed claims; but it differs in that it expects the decision maker to choose among contending values in search of fairness, not just apply preexisting rules to fulfill legislative intent.

If an agency takes the adversary process to an extreme, however, it risks compromising the values of bureaucratic rationality and professional treatment. That points up the basic problem, the author says: although all three models of "administrative legitimation" are plausible, they work at cross-purposes in practice as well as theory. Mashaw argues that "bureaucratic justice" must consist of an appropriate balance among these values, and that the program has evolved toward a generally sensible balance. The very unanimity of the criticism betokens a sort of success:

> The best system of administrative adjudication may be the one most open to criticism. A compromise that seeks to preserve the values and to respond at once to the insights of all of these conceptions of justice will, from the perspective of each separate conception, appear incoherent and unjust.

The other branches of government have repeatedly intervened to tinker with the balance, a process that Mashaw believes has had unfortunate results. Legislators have ordered the agency to combat delays and overpayments, while judges have interceded on behalf of dis-



appointed applicants—a crossfire that Mashaw says has battered the program alternately into states of caution and benevolence. "SSA has several hundred employees whose sole job is to respond to congressional inquiries about cases." It also "notifies inquiring congressmen of an award before it notifies the claimant," which "certainly does nothing for SSA's reputation for impartiality."

Such outside intervention, he believes, is not a very promising way to improve the quality of the agency's work. Instead, the internal norms of bureaucratic administration, based largely on the model of "rationality," hold out the best hope of a balance that will guarantee both fiscal integrity and the just disposition of disability claims. If so, Mashaw says, the much maligned "bureaucracy" may paradoxically be more effective than the democratically elected Congress in legitimating the actions of the administrative state.

A Longer Leash for Oxford and Cambridge?

How Much Freedom for Universities? Towards Independent Universities by H. S. Ferns, with an economic commentary by John Burton (Institute of Economic Affairs, London, 1982), 51 pp.

Until World War I, British universities got nearly all their income from endowments and student fees. That changed drastically in 1919, when they accepted a generous new program of government grants, the very first installment of which made up 29 percent of their total revenues. The University Grants Committee, established in the same year, distributed the money in annual grants fixed for a prescribed period of years.

"The UGC system was much admired both in Britain and elsewhere as a means of insulating universities from political pressure," writes H. S. Ferns, emeritus professor of political science at the University of Birmingham. The committee consisted mostly of academics independent of the government, and no questions were asked about its procedures. Thus the "Treasury made only one decision: to determine the amount of the grant recommended in Parliament."

As time went on the percentage of public funding crept up steadily. By 1939 about 40 percent of British university revenue came from the central government, and by the 1950s the share was approaching 55 percent. For quite some time, this system of finance seemed to serve its purposes well. Judged by numbers of Nobel prizes won or by less easily quantified measures of intellectual liveliness, British universities compared well with others.

Things started to change, Ferns says, when Treasury funding began to overwhelm other sources of finance. After the Soviet Union launched Sputnik and throughout the 1960s, subsidies for higher education were lifted to unprecedented levels. New universities were created and the old ones were greatly expanded. At the same time, local authorities were using mostly Treasury money to pay the tuition and expenses of more than half the student population. By 1970 universities were getting 90 percent of their operating expenses and 95 percent of their capital outlays from one or the other level of government. (There is one exception. The small University College at Buckingham, established in 1973, is completely independent of the state. It has carved out a niche for itself by offering intensive two-year degree programs and by offering its professors renewable employment contracts of two to five years duration, replacing the hallowed institution of tenure.)

Universities professed surprise when, amid the great influx of money, there came an end to the independence and hands-off approach of the University Grants Committee. "Both teachers and students failed to grasp the truth that once they had begun to consume hundreds of millions of pounds of public money they could no longer reasonably expect that no questions would ever be asked about how the money was being spent," the author says. "Inevitably the UGC became a controlling bureaucracy. . . ."

The fiscal crunch of the mid-1970s, which brought education spending under heavy budget pressure, completed the transformation of the University Grants Committee into what its former chairman has called a "strategic planning agency." The committee began trying to eliminate duplication by concentrating less popular subjects in fewer universities and by setting fixed targets for the number of students an institution should admit. Since salaries are

the largest item of expenditure, it ordered cuts in staffing levels. Universities have tended to make the cuts not by weeding out "deadwood," Ferns says, but by ceasing to recruit new professors and by promoting early retirement. During the 1981–82 year 1,600 academics retired early at a cost of £35,000,000 in compensation.

In concert with the Association of University Teachers, the grants committee prescribed a schedule of uniform staff salaries following a rigid "wage for age" rule, which Ferns says is making it impossible to afford any but very young professors. The committee also ruled that foreign students should pay "full cost" fees, but the universities are circumventing the rule—wisely so, in Ferns's opinion, since marginal cost is lower than "full cost" and since universities need price flexibility if they are to remain competitive. The government also sets staff-to-student ratios, student fees, and even the size of rooms for lecturers in London. "It is becoming increasingly difficult to distinguish one university from another."

Ferns argues that universities will not win political independence through deregulation until they accept financial independence as well. At present, he says, a few of the universities hardest hit by budget cuts are showing some initiative in recruiting students and finding funds on their own, but so far their efforts have been rather feeble: dramatic improvements cannot be expected overnight. Thus he proposes that the government cut its grants to universities by 5 percent a year in real terms for ten years, while also abolishing the University Grants Committee and giving the money directly to each university in proportion to the grant it received in a base year. Each institution would enjoy full legal freedom to own, use, or dispose of all its assets, to set its own fees, to admit students of its own choice, to fix the pay and working conditions of its staff, and to patent and otherwise profit from the knowledge it develops.

Ferns notes that universities would still be heavily dependent on government funding after ten years of this process. But, he says, they might by then have built up the skills to handle still more financial independence and, perhaps more important, the motivation to want it: "Having learnt to walk upright the academics may wish to run."

The Myth of De-industrialization
William H. Branson
(*Continued from page 29*)

tionalization of production. Assembly is done near the consuming market, with parts coming from many areas. Each country will fit into this world picture, depending on which sector it provides best. To quote from Marina Whitman, a distinguished economist and vice-president of General Motors:

> Under the "world car" concept, automobiles little differentiated in size and design among different geographic areas are assembled from parts and components that are to a large extent standardized and interchangeable. The expanded production takes advantage of economies of scale and the allocative efficiencies generated by differences in factor endowments and therefore in production costs. . . . One of the implications of these developments for the automotive trade is that the strategy of direct exports of finished vehicles will be replaced gradually by more complex trading relationships involving vehicles and parts. [Princeton Essays in International Finance, no. 143, 1981]

In the rationalized world auto industry, the United States will provide parts that require skill, innovation, and technology data. The increasing total deficit in auto trade since the 1960s is due to imports of passenger cars. But since the mid-1950s, the United States has had a *surplus* in trade in auto *parts* running at about $1–2 billion. The U.S. auto industry will probably shrink some more, but it will not disappear. It will be integrated into a world system in which the United States will maintain its competitiveness in the subsectors where it performs best.

Our Competitive Position Threatened, 1981–83

In 1981 a shadow was cast over this bright picture of competitiveness and continuing adjustment toward high-productivity sectors. The shadow was the combination of the massive multi-year tax cut and the phased increase in defense spending prescribed in the 1981 budget, and the monetary tightness needed to restrain inflation in the face of the resulting

budget deficits. This raised U.S. interest rates and the value of the dollar. Indeed, the 25 percent real increase in the dollar from 1980 to 1983 gave back to the world *all* of the competitive gains that had been achieved from 1971 to 1980. By making U.S. manufactures that much less competitive across the board, the dollar's appreciation threatens to weaken the entire U.S. industrial structure. In a March 1983 speech, Chairman Martin Feldstein of the President's Council of Economic Advisers stated the problem clearly:

> The prospect of large future deficits in the second half of the 1980s and beyond would keep long-term interest rates high in the next few years and thereby depress spending on investment in plant and equipment and in housing. The higher real long-term interest rate would also keep the exchange value of the dollar very high, thus encouraging imports and weakening the competitive position of U.S. exports in the world economy. In short, the prospect of large budget deficits would mean a very lopsided and unhealthy recovery in which several key industries fail to share in the economic recovery.

The source of the problem, of course, is the Reagan administration's own budget. There is no way that adjustment and flexibility can offset the effects of high interest rates and a highly overvalued dollar in undermining the U.S. competitive position. A macroeconomic policy that permits realistic levels of U.S. exchange rates and interest rates is essential if our "high-tech" industries are to be competitive and continue to grow.

The Moral of the Story: Adjustment to Competition

When the economy is adjusting smoothly, jobs lost in declining industries are lost to firms, but not to *workers*—who move on to other jobs that are opening in expanding industries. While the movement can be painful and costly, especially if we do not have an effective policy for training and relocation, the new jobs are likely to have higher productivity and perhaps higher pay than the old jobs. Nevertheless, the old jobs are surely "lost" to the shrinking basic low-technology industries, which creates serious problems for the firms, the communities, and the unions entrenched in those industries.

With plants closing or cutting back, workers having to search for new jobs, and the local tax base contracting, it is little consolation to the particular workers, unions, and towns that growth is rapid in another industry on the other side of the country. The gains from trade and adjustment go to *all* the consumer/taxpayers in the country, while the losses are concentrated on the few who are in the shrinking industries. Thus, it is entirely appropriate that the federal government use general tax revenues to minimize the costs of adjustment and speed the process. By and large, the capital markets move resources in the right direction, so there is no need for an industrial policy that directs the allocation of resources. What we do need, however, is a program that provides retraining and relocation assistance for workers who have to adjust and some sort of interim support for the affected communities. Designing an effective program of this kind should be a high priority for policy makers and researchers today. For it is an essential part of a policy package to keep the U.S. economy flexible and competitive.

A policy of encouraging open trade and resource reallocation can stand only as one leg of the stool. An effective assistance policy that smooths the course of adjustment and a macroeconomic policy that ends the misalignment of the dollar are the other two legs. Without any one of the three, the gains from a competitive economy will be lost. ■